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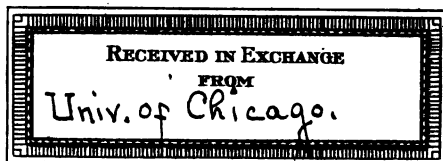
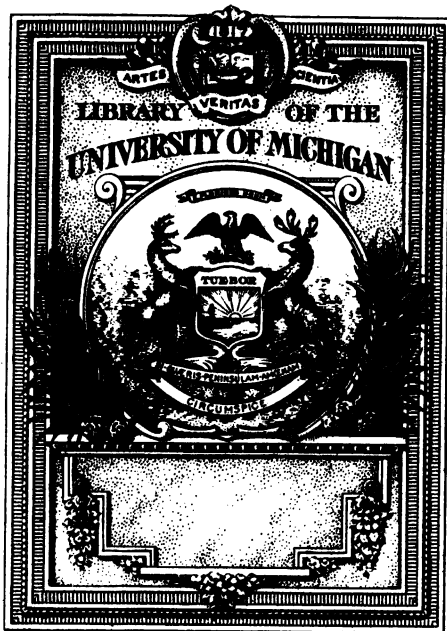
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The **GREAT INTERNATIONAL
FISHERIES EXHIBITION**

THE
FISHERIES OF SPAIN

BY

LIEUT.-COL. FRANCISCO GARCIA SOLÁ

EXECUTIVE COMMISSIONER FOR SPAIN TO THE INTERNATIONAL
FISHERIES EXHIBITION

*Dep. U. of C.
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International Fisheries Exhibition

LONDON, 1883

THE FISHERIES OF SPAIN

BY

LIEUT.-COL. FRANCISCO GARCIA SOLÁ

*AN EXECUTIVE COMMISSIONER FOR SPAIN TO THE
INTERNATIONAL FISHERIES EXHIBITION*



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International Fisheries Exhibition

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LONDON, 1883

CONFERENCE ON THURSDAY, JULY 5, 1883.

LORD EDMOND FITZMAURICE, M.P., in the Chair.

THE FISHERIES OF SPAIN.

After a Paper on the Fisheries of Sweden and Norway had been read, the Chairman said there was still time for another Paper; and as they had on the platform the advantage of the presence of the delegate for the more southern country, he would next ask them to listen to Captain Comerma, who would read a Paper by Lieut-Col. Solá, descriptive of the fisheries of Spain.

The Paper was as follows:—

When the Spanish Commission began to study this Exhibition and everything connected with it, we could not but acknowledge that the Conferences should be the complement of what may be called the struggle of civilisation, because it is not enough to be acquainted with the industry of every nation in all its branches, if you do not, by means of lectures or Papers, illustrate in a wide manner all the details concerning the development of this industry and the ideas prevailing about it in each country.

Acting on this hypothesis we have arranged to give, later on, a Conference,* in which will be reflected the general opinion respecting some important points of controversy, of

* See Paper entitled "Basis for Legislation on Fishery Questions," by Lieut.-Col. Solá, read on 19th July, 1883.

those of our countrymen who are interested in fisheries. Therefore, the only object we have to-day in addressing this learned meeting is to fulfil a duty of courtesy in answering the invitation which we have had the honour to receive from the Executive Committee.

As the time is so short for dealing with so many important subjects, we must confine ourselves to a simple exposition of facts.

The Spanish peninsula has 2,920 kilometres of coast, which, when considering the fisheries, can be divided into three districts marked by nature by means of slight variations. The first is comprised between the French frontier on the Bidasoa river and Miño limit of Portugal, forming a total length of 1,567 kilometres of coast. This is the part most productive in fishery industry, and fishing is carried on by some steamers, but chiefly by sailing vessels using nets, lines, and hooks.

The nets used are of many kinds and shapes, having a variety of names, difficult to translate into English; we will, therefore, merely point out that seines, drift and cast nets, with or without bait, and also drag or trawl nets, are used to some extent on the coast we are dealing with.

The most important gear, however, used is the "cerco real" (literally *royal circle*), which is rarely met with, on account of its great cost; it is employed generally for catching migratory fishes, chiefly the sardine (*Clupea sardina*). The fishermen, by means of twenty or thirty boats carrying this net, make a "great circle," and surround a large space of water, joining different parts of it; pulling both ends together, and afterwards drag the whole net towards the shore, forming at last a smaller enclosure. Here the sardines are kept until the preserving factories are able to make use of them, and thus is obviated the necessity of throwing away much useful fish or using it for

manure, as happened in former times with the surplus of the daily consumption.

The sardine fishery is one of the most important in Spain, not only on account of the great quantity caught in the present day—about one hundred thousand tons per year—but also by the increasing number of this fish observed near the north coast, and more specially the north-west.

It is in this part of the coast where the greatest trade and exportation takes place, amounting to about an average of sixty-one to sixty-two millions of kilogrammes, of the value of £80,000 to £120,000 sterling. In addition to this, the tinned fish, of which we cannot give an official return; but it may be approximately estimated at the same quantity as the salted and fresh fish.

The number of curing establishments exceeds six hundred.

The culture of oyster and other mollusca, as well as the protection and cultivation of lobsters, is carried on in that part of Spain. There are also many private establishments granted by Government to private individuals for the cultivation of mollusca, chiefly oysters; in consequence of this, and the Government's provision for preventing the depletion, we hope the ancient natural beds—formerly so rich and now nearly all exhausted by over-dredging—will again acquire their former wealth.

The Government is paying every attention to the matter, and is laying down, at the expense of the nation, a model park for oyster culture in order to teach to those interested in the subject the most modern methods for the cultivation of oysters, and so replenish the natural beds, which are now almost completely exhausted by culpable abuses.

This district possesses the most favourable conditions that can be imagined for fisheries, owing, in the first place,

to the unevenness of the bottom of the sea—with an exception in the case of the estuaries, drag-nets cannot be used—and secondly on account of the geographical position, formed by a line from east to west, where the very many estuaries and small rivers deposit great abundance of food for fish from the fertile lands they run through. As the inland estuaries are also favourable to the increase of fish, there may be said to be many good elements given by nature to that privileged coast.

The second district or division begins at the mouth of the Guadiana river and ends at Gibraltar, being in all 204 kilometres. In proportion to its length it is no less rich in fish than the former, and a proof of this is that, very few years since, those shores were nearly uninhabited, and now there has been formed there a colony of fishermen in Cristina Island with a considerable population.

There are found excellent waters, large creeks, good bottoms, and temperate climate. The prevailing mode of fishing is with nets and some lines; the most important of the former being the *galleons*. Now, unfortunately, they commence to use the drag-net, called "*bou*," a model of which can be seen in the Spanish Court of this Exhibition. The *almadraba*, also shown in our section, is a fixed net for the tunny and other species coming every year from the Atlantic to the Mediterranean Sea through the Strait of Gibraltar.

Some enterprising foreigners, encouraged by the abusive capture of oysters which is allowed to take place in Portugal, and by the high prices at which these molluscs are valued on account of their large size, easy production, and superior alimentary conditions attributed to them, intended to utilise the natural beds, and so drag them, heedless of all wasteful destruction; but the Government has taken

notice of it, and will not permit any establishments beyond those applied to the production of this favourite mollusc.

All the salted and pickled fish of Cristina Island and those taken with the *almadraba* are for the most part consumed in Spain, but a small quantity is exported. The proximity of the salt-pits of San Fernando afford great advantages to the fishing industries of that part of the country.

Sailing vessels and some steamers are used for fishing purposes.

The Mediterranean shores from Gibraltar to the eastern coast of France, a length of 1,143 kilomètres, form the third district alluded to. It is the poorest in fish, considering its great extent, and the drag-nets are employed there on a larger scale than in the other divisions. The reason of this scarcity is to be found in the destructive nature of the kind of apparatus used, because the natural conditions for the propagation of fish cannot be better. The supply of food for fish, due to the considerable quantity of vegetable and animal substances carried to the sea along the different rivers, through most fertile land; the good temperature in that part of the country, and the abundant submarine vegetation, show that the scantiness of fish can only be attributed to over-fishing.

So many and different are the gear, nets, &c., employed for fishing on the east and south coast of the Mediterranean that it would be almost impossible, or at least would require a great deal of time, to describe them.

The nets are used generally without bait, which is only adopted for hooks. As an element of attracting fish, torches and lights are employed for fishing with spear and nets.

A new invention, or rather an improvement has been

exhibited by a fisherman of Tarragona ; it is intended for fishing with a light, and consists of a boat fitted with four petroleum lamps in a glass case fixed at the bottom of the boat with a reflector behind them, in order to concentrate the beams of light and throw them downwards into the water. Knowing the inclination of the fish to follow the light, it cannot be denied that this apparatus will give satisfactory results, and this has been already practically proved since the appearance of this invention, as by it a larger amount of fish has been caught than by any other apparatus formerly known.

The nets used with the submarine light boat are called *almadrabilla*, and are cast by three boats, forming underneath, when the fish commence to follow the light, a kind of purse, in which the fish become imprisoned.

It can be easily understood that their principal advantage over the other systems of fishing with light consists of the means of throwing light to a greater depth, and covering a larger area.

It has occurred to us that when the electric light can be obtained cheaper, and with accumulators or batteries, as the nets used are of a kind not injurious to the fish, the advantages will be further increased.

It must be remarked, that near the shores of the Mediterranean are some inland seas called *albuferas* ; the principal one is the Mar Menor, and afterwards, those of the Delta of the Ebro river. In these saltwater lakes are some fishing establishments which promise in the future better results in sea-fish culture than those of the well-known lake of Commacchio, near the Adriatic.

Many grounds with coral may also be counted along that coast ; but some want to be left at rest for some time for reproduction, as they are at present

exhausted with the immoderate use of the diving apparatus.

The inhabitants of the Calabrian shore, who have for many centuries been devoted to coral fishing, are now subject to a complete paralysation on account of the increased duties charged to them on the northern coast of Africa ; a similar falling-off has also occurred in Cabo Verde Islands.

It is urgently necessary that nations possessing coral grounds should pay more attention to the gradual reproduction of these and other useful zoophytes, giving to them more time for growing, and should also take much care and exert great vigilance about the extraction ; and they will in this way avoid the extirpation of the roots, as the coral-fishing divers do in using their axes—as this is an abuse that makes many consider the use of diving apparatus injurious, although it may be, indeed, an improvement in this industry, because the projecting arms of other coral fishing apparatus can never go through all the sinuosities of the caverns, nor can they easily cut the branches found in some hollow parts of the upper parts.

As regards the manufacture of fishing material, we may say that it takes place along all the coast of Spain ; the vessels and hooks, of galvanised iron, are built and made in the Basque and Catalan provinces, and our nets are made by machinery in the factories of Catalonia and Mallorca.

In conclusion, the administration of the sea fisheries is in charge of the Minister of Marine, under whose authority works a Central Fisheries Commission, composed of men eminent in all branches of science and industry ; in each maritime province there exists another board, composed of the harbour master, a lawyer, a naturalist, and some

ship-owners, or manufacturers connected with fishing industries; all these corporations are devoted to practical observations and experiments, in order to get all the practical information about fisheries.

The Central Commission reports to the Government all the subjects under their consideration, proposes the improvements that they may think convenient with a view to making laws and regulations, and spread knowledge of fisheries and encourage manufacturers by the publication of their works.

The fishing industries of Spain being represented at the Fisheries Exhibition in London by the Commissioners, under the Chairmanship of the President of the Central Commission in Madrid, we will now take the opportunity of giving our most hearty thanks to the Executive Committee of this Exhibition, at the head of which is an illustrious Prince, for all the kindness and attention we have received from them, and also for the instruction we have acquired, showing us the progress of all the nations here present, to the Commissioners of which we also address our congratulations.

The CHAIRMAN, having alluded to the interesting character of the Paper just read, said there were several other delegates prepared with Papers. It would be far better, instead of trying to hurry through them, for the meeting to be adjourned, and hear these Papers on a future occasion.

Mr. DUFF, M.P., then proposed a vote of thanks to Lord Edmond Fitzmaurice for presiding. They could all easily imagine that at the Foreign Office his noble friend found considerable occupation, and in addition to that he could add, from personal knowledge, that he was often required

and always responded to the appeal made to him to attend in his place in the House of Commons. Considering, therefore, the great demands made on his time, they were much indebted to him for coming to take the chair that day. He would only further add that, whether his advice with regard to fish diet were taken or not, he was quite certain that those troublesome questions which sometimes came before him connected with fishery matters in foreign countries would always receive from him an impartial and judicial treatment.

Mr. MONDEHARE said he was desired by M. Mancel, the French Commissioner, who did not feel himself sufficiently conversant with the English language to do so, to second most cordially this vote of thanks ; and he begged him to avail himself of the opportunity to express how grateful the French sailors and fishermen who visited the Exhibition had been to the English people for the hospitality they had received.

The motion having been carried unanimously—

The CHAIRMAN said it was not only a great pleasure to be present that day, but he also felt it to be his duty to attend, because he appeared in a humble way as representing the Foreign Office, and to extend to the foreign delegates that welcome which he could assure them was most cordially extended to them by his noble chief, Lord Granville, who would have been present had it been possible. In conclusion, he begged to move a most hearty vote of thanks to the gentleman whose Paper had been read.

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